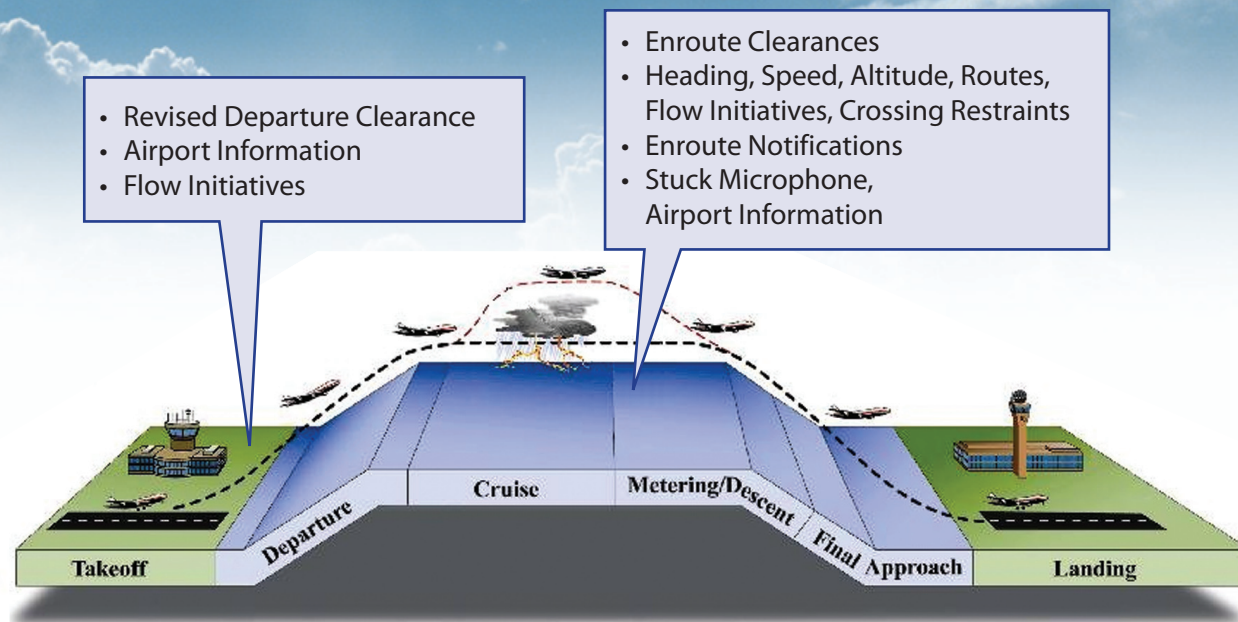




## Data Communications Benefits for Airspace Users

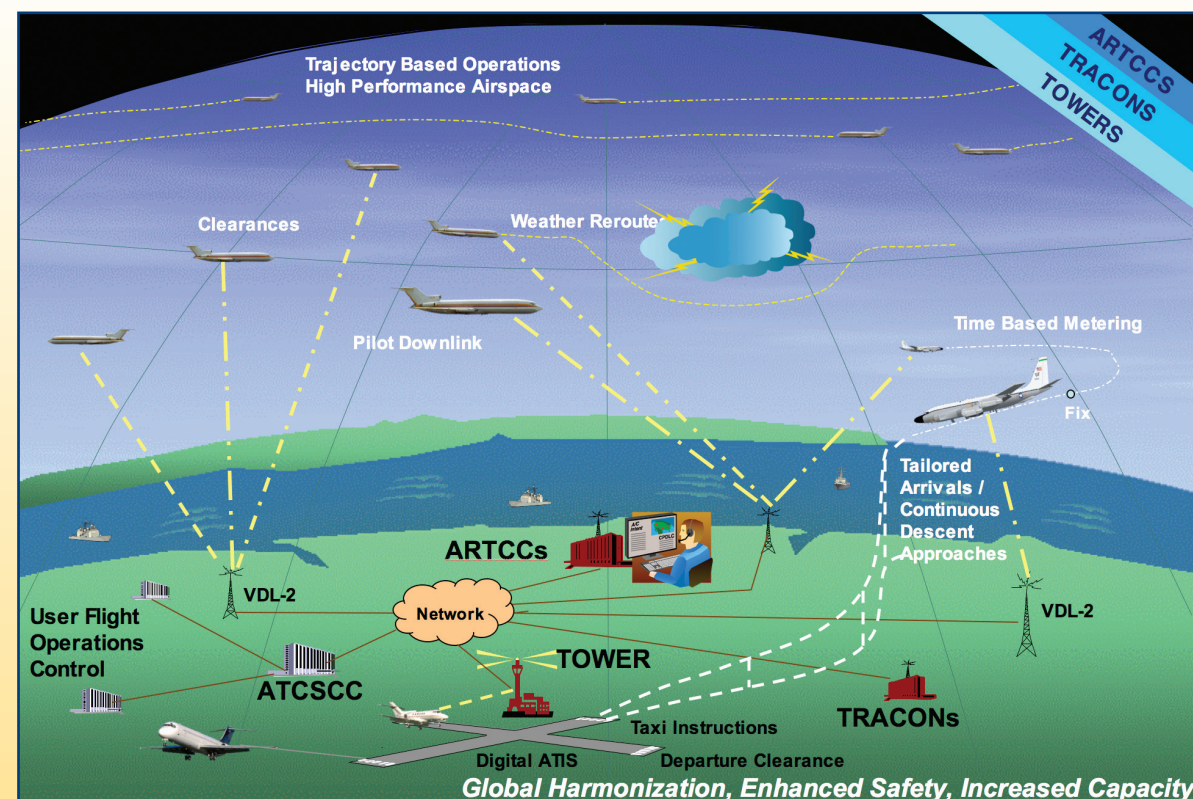


### Nominal Operations

- Increases controller productivity leading to increased capacity in all phases of flight
- Enables new air traffic control services such as new re-route types and trajectory operations
- Reduces communication errors

### Disrupted Operations

Reduces: ground delays, airport reconfigurations, congestion, management due to convective weather and other delays.

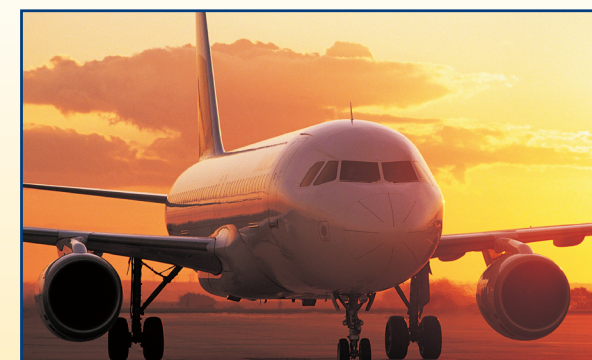


## FAA NextGen Data Communications Frequently Asked Questions

1

**Question:** What is FAA's NextGen Data Communications program?

**Answer:** The FAA's Next Generation Air Transportation System (NextGen) is a wide ranging evolution of the entire national air transportation system to meet future demands and avoid gridlock in the sky and in airports. FAA Data Communications is a key transformational program within the FAA NextGen effort. Data Communications is digital data exchange between air traffic controllers and pilots. FAA and its partners in the aviation industry are working to improve and modernize our nation's aviation infrastructure, which includes airports, airways, aircraft and the air traffic management system. The Data Communications program is aviation's critical next step and will transition FAA's role from air traffic control to air traffic management.



a wide array of critical information between air crews and controllers. The use of voice communication is labor intensive, time consuming and limits the ability of the NAS to effectively meet future traffic demands. The introduction of NextGen Data Communications represents the first phase of the transition from the current decades old analog voice system to a digital mode of communication. Data Communication will assume an ever-increasing role in air traffic control and flight crew communications.



**Question:** What will be the benefits of the Data Communications program for NAS users?

**Answer:** Once implemented, the Data Communications program will:

- Evolve air traffic from short-term tactical control to managing flights strategically gate-to-gate
- Enable more efficient operations such as trajectory-based routing and optimized profile descents
- Support safety-of-flight command, control and information services by providing comprehensive data connectivity, including ground automation message generation, transmission and routing

**Question:** Why is the NextGen Data Communications program important for 21st century aviation?

**Answer:** Investment in FAA's NextGen Data Communications technologies is the critically important next step for improving air safety, reducing delays, increasing fuel savings, improving the environment and leading U.S. aviation into the 21st century. In today's National Airspace System (NAS) air traffic management depends on voice communications to relay



- Support the NextGen vision by providing data transmissions directly to pilots and their flight management systems
- Automate repetitive tasks, supplement voice communications with less workload-intensive data communications and enable ground systems to use real-time aircraft data to improve traffic management efficiency
- Provide revised departure clearances, which will reduce taxi time and controller workload, improve departure queuing and reduce ground departure delays
- Reduce voice frequency congestion
- Enable pre-departure clearances that would be inefficient to deliver by voice
- Reduce errors associated with voice communications
- Improve utilization of departure runway capacity
- Improve airport throughput
- Reduce impact of weather events; and
- Reduce in-flight and ground user fuel consumption.

Initially, Data Communications will supplement existing voice communications and provide two way data exchange between controllers and flight crews for clearances, instructions, advisories, flight crew requests, and reports. As Data Communications becomes the norm, the majority of pilot-controller exchanges will be handled by Data Communications for appropriately equipped users.



**Question:** Will the Data Communications program improve aviation safety?

**Answer:** Data Communications will provide comprehensive data connectivity for critical services and enhance air traffic safety with:

- More timely and effective clearances
- More time for controllers and pilots to think and select appropriate actions
- More orderly communications during peak traffic; and
- More reliable messaging and reduced operational errors associated with voice communications

**Question:** Will the Data Communications program reduce costs and save NAS users money?

**Answer:** The operations enabled by Data Communications will have the added financial benefits of reducing ground delays and significantly increasing fuel savings through more efficient routes and optimized profile descents.



**Question:** Will the Data Communications program help protect the environment?

**Answer:** Reduced fuel use will have the important environmental benefit of reducing aviation greenhouse gases and jet engine particulate emissions. According to FAA projections, the full implementation of NextGen could reduce greenhouse gas emissions from aircraft by up to 12 percent by 2025, equivalent to taking 2.2 million cars off the road.

**Question:** Will FAA's NextGen Data Communications program reduce delays and costs due to severe weather?

**Answer:** Yes, the Data Communications program enables the generation and delivery of more direct routes around weather events, which results in improved flight times and fuel cost savings.



**Question:** Will FAA's NextGen program create jobs and help local economies?

**Answer:** In a letter to U.S. congressional leaders 12 leading aviation organizations stated that in 2006 America's airlines contributed \$692 billion to our nation's Gross Domestic Product (GDP), directly and indirectly supporting 10.2 million U.S. jobs. In 2007, \$394 billion of U.S. exports and \$415 billion of U.S. imports were shipped by air. However, in 2008

and 2009, according to the Air Transport Association (ATA) passenger carriers and other aviation sectors have shed more than 27,000 jobs, announced 10,000 additional lay-offs and eight airlines have gone out of business. Modernizing FAA's air traffic control system with NextGen will create jobs immediately and reduce air traffic delays in the years ahead. ATA states an investment of \$4 billion in NextGen funding and avionics equipage will generate more than 75,000 high paying jobs in the high-tech fields of civil aviation manufacturing, flight operations, maintenance and environmental protection.

**Question:** Will the Data Communications program help reduce passenger delays and flight congestion at America's high density airports?



**Answer:** When it comes to airspace around the nation's busiest airports (Chicago, New York, Dallas/Fort Worth, Los Angeles, Miami etc.) NextGen Data Communications will provide capabilities that will help lead global aviation into the 21st century. New procedures will improve airport surface movements and better manage overflows into and out of busy metropolitan airspace to provide maximum use of the highest demand airports.

**Question:** Does the U.S. aviation industry support FAA's NextGen efforts?

**Answer:** In a letter to U.S. Congressional leaders many key U.S. aviation organizations urged congress to fund \$3 billion in NextGen equipage to reduce delays, fuel use and emissions. The letter was signed by the following organizations:

Aerospace Industries Association, Air Transport Association, Airport Consultants Council, Airports Council International-North America, Aircraft Owners and Pilots Association, American Associations of Airport Executives, Cargo Airline Association, General Aviation Manufacturers Association, National Air Carrier Association, National Business Aviation Association, National Association of State Aviation Officials, and the Regional Airline Association.



**Question:** Why NextGen Data Communications and why now?

**Answer:** Data Communications is a key transformational program enabling advanced NextGen capabilities not possible using the current voice system.

Data Communications will allow the NAS to handle more traffic, reduce flight delays, route aircraft more efficiently, enhance safety and improve the environment all while constraining operational costs for airspace users.

The FAA projects that domestic air travel will grow substantially by 2015. Without NextGen, America's air transportation industry runs the risk of gridlock in the skies and severely damaging our nation's local and national economies. By 2022, FAA estimates that failure to fund and implement NextGen would cost the U.S. economy \$22 billion annually in lost economic activity. The number grows to more than \$40 billion annually by 2033 if NextGen is not implemented soon. Even as early as 2015 FAA simulations show that without some of the initial elements of NextGen in place, U.S. air carriers and passengers will experience delays far greater than what we are seeing today.

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